



Works by Gabriela Manole-Ador and George Ador: The Social Revolt; The Monument of Independence in Iași; Ștefan Călugăreanu; Păcurari; The 1984 Olympic; Sketch for the Monument of Independence; Meditation.

Two artists Gabriela Manole-Ador (b. 1928) and George Ador (b. 1934) are two distinct personalities who follow separate paths, without influencing each other, although they work in the same studio.

But despite the strong differences of style and outlook, their vigorous attitude towards the exigencies of art, their passion and scrupulousness undoubtedly bring them close to each other.

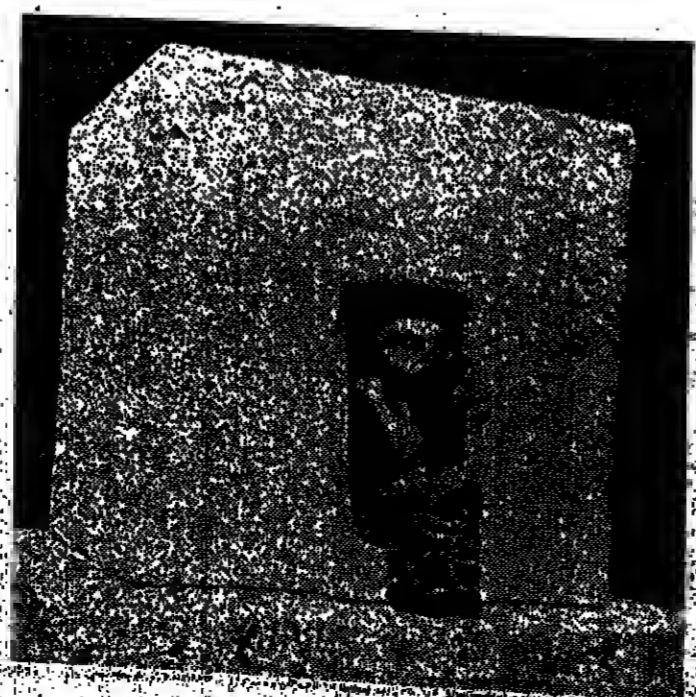
These factors unite them in their quest for creating a personal art with special and interesting virtues.

Gabriela Manole-Ador's sculpture breathes a pacifist atmosphere in which the skillful modelling with those transitions from quiet and simple planes to agitated and vibrating surfaces, creates a highly expressive reality which whether we refer to her great monuments or to her small-size sculptures.

George Ador, a graphic artist by training, has also approached sculpture and especially the bas-relief during his career. His bas-reliefs, in which he preserves the style of his graphic works, are altogether remarkable and singular. He communicates a rigorous craftsmanship, both in his medallions and in his monumental surfaces.

These two outstanding artists had a well-deserved foremost place in Romanian fine arts.

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AN IMPORTANT FACTOR OF ECONOMIC PROGRESS  
FOREIGN ECONOMIC RELATIONS

## TRADE, COOPERATION, DEVELOPMENT

CONSTANT EXPANSION OF INTERNATIONAL ECONOMIC EXCHANGES • SIGNIFICANT QUALITATIVE CHANGES IN THE STRUCTURE OF FOREIGN TRADE • COOPERATION IN ECONOMY AND PRODUCTION, A SUPERIOR FORM OF COLLABORATION • A MERCHANT FLEET COMMENSURATE WITH FOREIGN ECONOMIC ACTIVITIES • FURTHER ACCENTED DYNAMICS OF THE EVOLUTION OF FOREIGN ECONOMIC EXCHANGES

The activity of foreign trade and cooperation in economy and production has widely expanded, resulting in Romania's ever steadier and more efficient participation in the international economic life.

Nowadays Romania has economic ties with 148 countries on all continents, compared to 98 states in 1965. Taking into account the truth that in the present extremely complex international circumstances the economic collaboration between the world's countries represents a development strategy, a necessity imposed by the international division of labour, by the ever more interdependences among the national economies and by the interests of détente and rapprochement among peoples, Romania is promoting an equitable trade, based on mutual interests and benefits, based on any protectionist barriers.

Apart from broadening the geographic

areas where her commercial partners, markets and supplies are to be found, Romania has continually developed the volume of her economic exchanges. In 1987, the volume of Romanian foreign trade was some eight times larger compared to 1965, and the annual value of per capita exports was more than nine times larger, exceeding imports by far.

### DOSSIER

## MULTIPLE FORMS OF ECONOMIC EXCHANGES

The role of foreign trade and economic cooperation as a factor of enhancing domestic development possibilities is highlighted by the increasing dynamics of this activity in the mentioned interval (1965-1987), compared to that of industrial production (which grew some seven times) and of the national income (which rose about five times). An illustrative indicator of the ever more significant role of foreign trade and of the extent of the Romanian economy's participation in the world exchanges of material assets is the evolution of the export share of the national income, an indicator which doubled between 1965-1987 to reach

almost one fourth of it. Several branches of machine building, chemistry and petrochemistry, the light industry and the wood-working industry export of present more than half of their whole output.

The effort to develop stable, long-term ties with partners abroad, capable of meeting the complex situations created by contemporary progress and economic development, has led to the amplification of economic and technical-scientific cooperation as an advanced form of international economic relations. At present, almost one third of the total volume of Romania's economic exchanges with foreign countries unfolds as part of various cooperation

forms: from providing designs and technical documentation, licenses, know-how, technical assistance, other engineering services, founding joint production ventures based abroad as well as in Romania, to delivering equipment, machinery and plant and building various projects and units in the most diverse branches (machine building, electronics and electrical engineering, chemistry and petrochemistry, metallurgy, power, mining and other economic sectors). In this way one has also secured considerable amounts of raw and subsidiary materials (about one fifth of the national economy's current needs).

Export structure has significantly been improved in recent years. While in the 1960s, raw materials and farm produce accounted for 75-80 per cent of Romania's foreign sales, in 1987 highly processed products (of the machine building, chemical and consumer goods industries) accounted for over one third (38 per cent), and at present their share is 63 per cent. At the same time, the Romanian in-



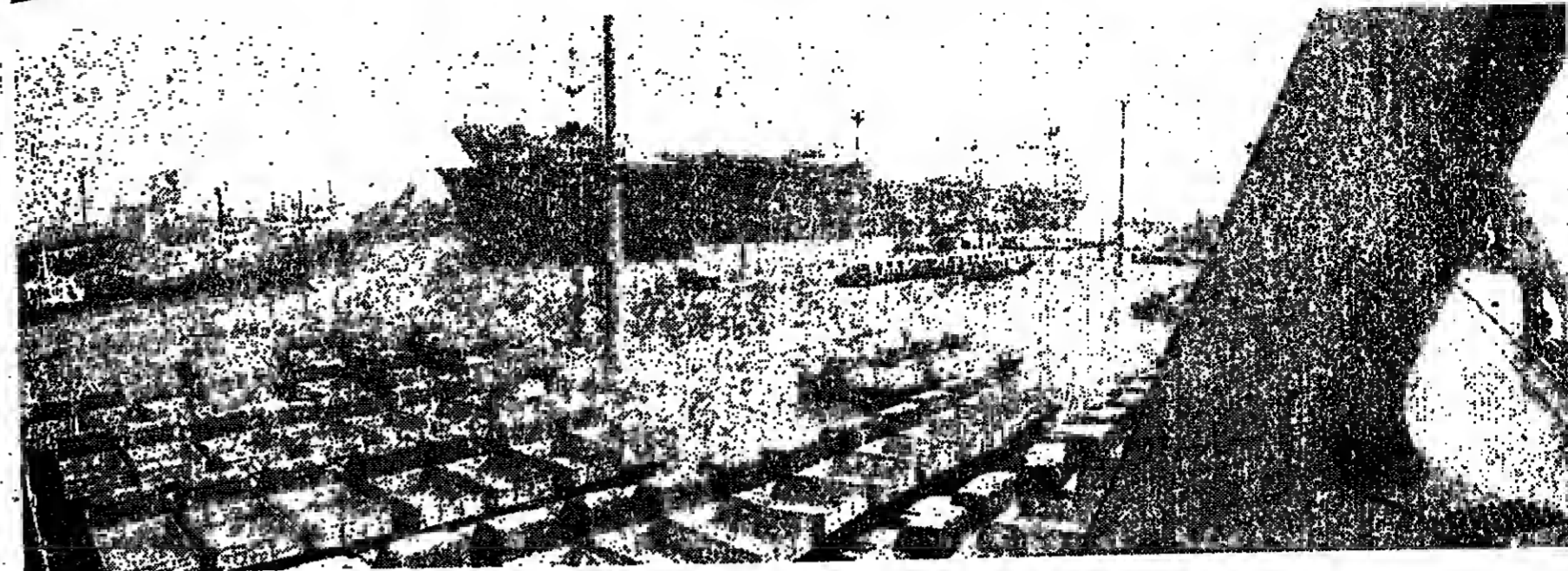
## INDUSTRIAL JEWELS

Romania's railway bearing industry makes at present, more than 4,500 types of bearings with diameters ranging from 1-1 mm to 2,100 mm (compared to 23 types in 1940). In this interval, the existing units were developed and modernized. But, the real development of the respective sub-branch took place over the 1970-1980 decade when, in cooperation with famous firms in the field, four new works were built: the Alexandria enterprise (with the Japanese firm Kyuo Seiko), the heavy bearings enterprise of Pitesti (with the US Railway Bearing Co firm) and the factories of integrated bearings at Birlad and Bragov (with the firm Kyuo Seiko). Prestigious firms of West Germany, the USA, France, Italy, Japan, Sweden, Switzerland and Austria contributed, at the same time, to the development and diversification of the Romanian bearing industry.

The railway bearing industry continuously developed and modernized covers at present almost all the needs of the national economy. At the same time, more than 80 per cent of the output bearing production is exported to over 70 countries, among which the USA, the USSR, Great Britain, People's China, Japan, Czechoslovakia, France, Brazil, the GDR, Argentina, Hungary, Austria, Poland, Belgium, Bulgaria, Sweden, Yugoslavia, the Philippines, Pakistan, Turkey, the United Arab Emirates

industry's capacity has been increased for exports to third countries by big and strong economic goals, accompanied by specific modern, highly efficient technology, competent technical assistance to erection, putting in operation, and exploiting the respective units, in the homogenous personnel of the various enterprises. These qualified resources are directly needed to the growing foreign trade of the country, in the various branches of the Romanian industry, whose production potential grew at an average annual rate of 14 per cent in the 1980-1987 period.

The volume of Romania's economic exchanges with foreign countries has increased constantly in the last two decades, only in the last year decreasing slightly. In 1987, the total value of Romania's foreign trade, of which 65 per cent was exports, reached 14,000 million dollars, of which 65 per cent was exports. The forms of economic exchange between Romania and foreign countries have been diversified and developed.



## A WIDE OPENING

Romania will further pay special attention to developing and deepening her relations with these countries, considering that a passage is possible now to a new, higher stage, characterized by the establishment of lasting, long-term production relations, the joint building of complex economic projects, the deepening of specialization and cooperation. Romania boasts adequate productive possibilities and

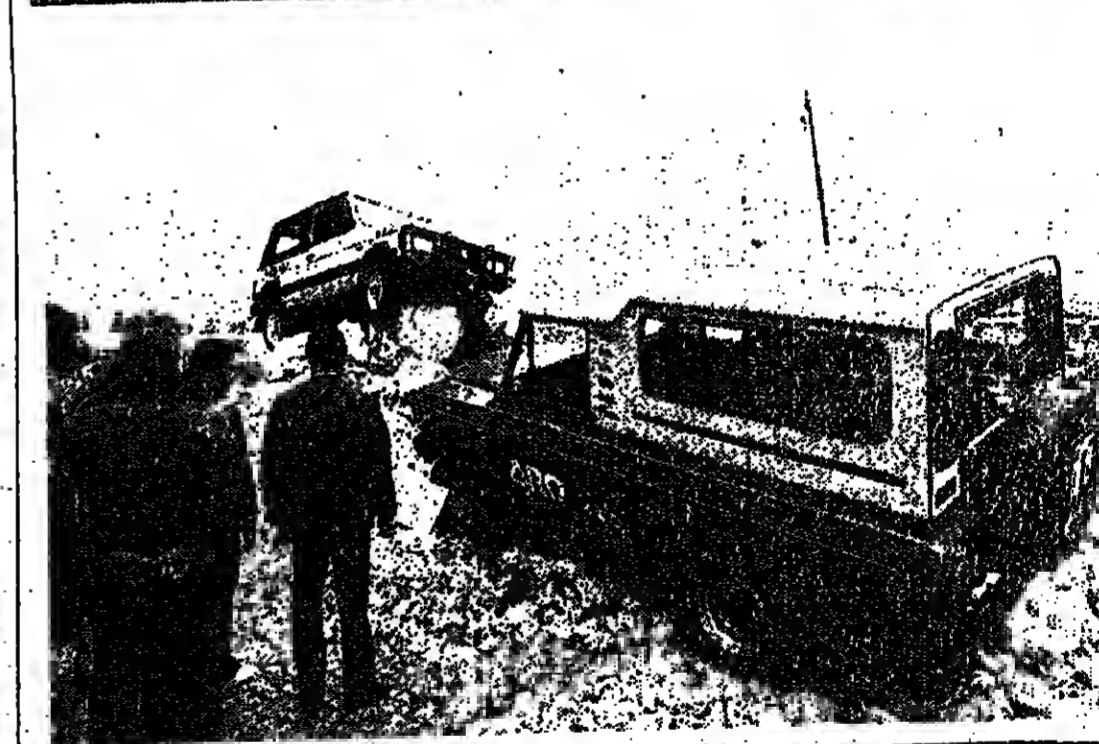
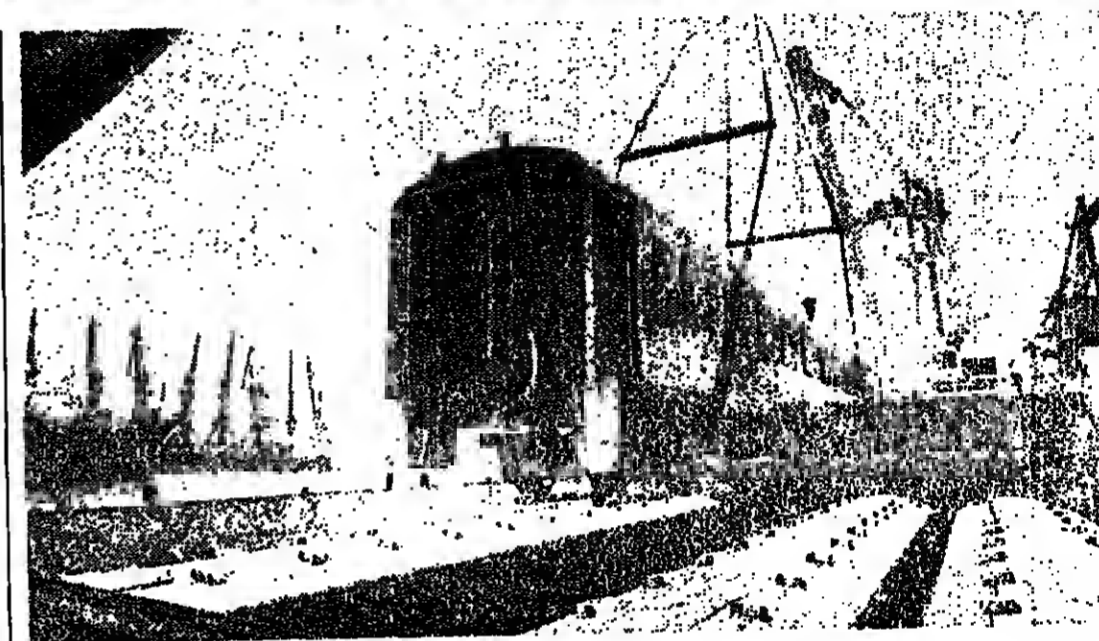
is working towards the acceleration of technical-scientific collaboration with a view to manufacturing high-tech equipment and plants meant to ensure the rapid growth of labour productivity and economic efficiency, the modernization and automation of production processes and the reduction of expenditures, the turning out of internationally competitive products. Romania attaches special



## TRUCKS IN 70 COUNTRIES

The Bragov Truck Enterprise is currently one of the most modern and strongest manufacturing units in Romania. It made its debut in the mid-1960s, when the first Romanian-designed trucks rolled off its assembly lines. The experience gained during this interval, the enterprise's modern equipment and the acquisition of a valuable research and design potential enabled the Bragov manufacturing enterprise to create the fourth generation of Romanian trucks. The year 1984 marked the assembly of the first three types of vehicles belonging to this generation, known in many countries under the name of DAC.

On the whole, the Bragov works manufactured over 100,000 trucks of various capacities and types. More than a third of the total truck production was exported to over 70 countries on all continents. To People's China alone, for example, 55,000 trucks and these assembly lines have been delivered. "Universal Truck" and "Foreign Trade Enterprise" (located in Bragov) deliver ROMANIAN and DAC trucks, chassis and trailers abroad.



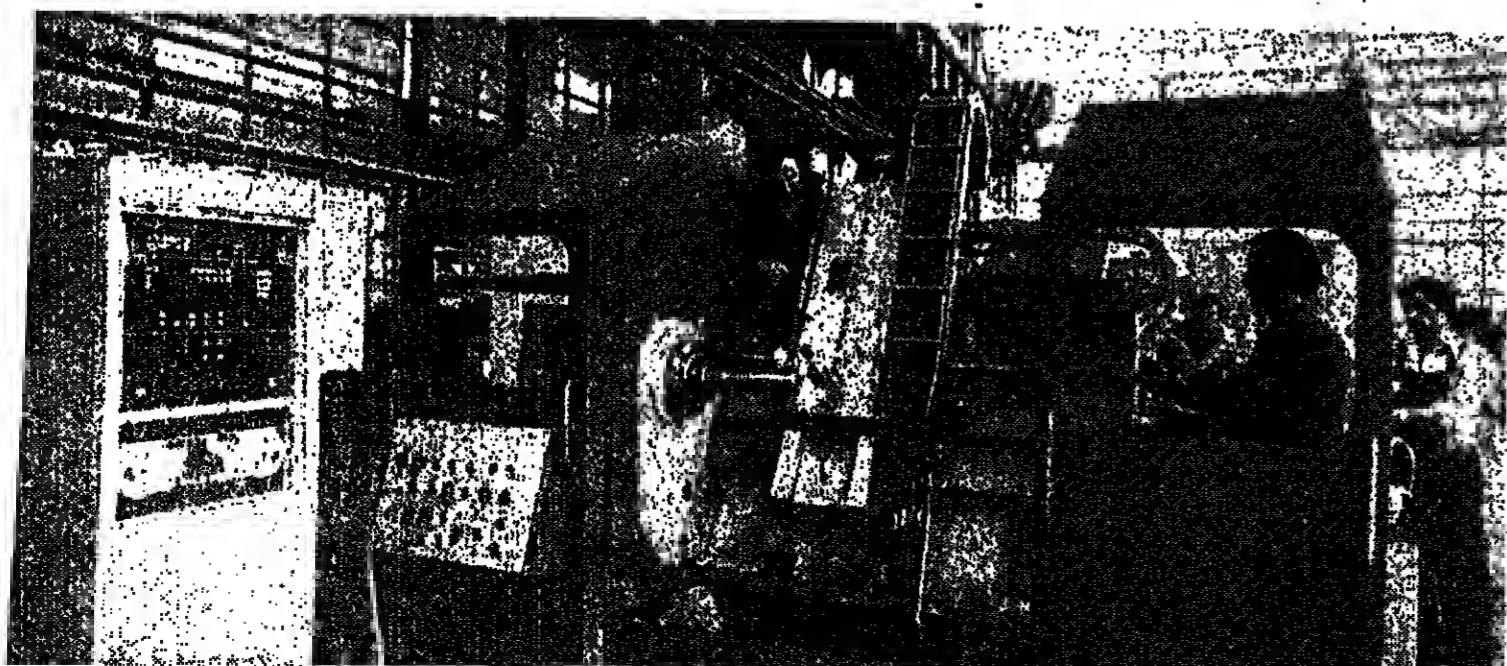
importance to multilateral collaboration within CMEA, whose founding member she is, being a party to some 250 agreements, conventions and other long-term multilateral understandings among that body's member countries.

Romania has developed and diversified material goods exchanges with developed countries, the amplification of relations with these countries ensuring both the development needs of the Romanian foreign trade and the interests of partner states in the consolidation of their own economies and political independence. Romania promotes commercial and economic cooperation and trade with some 100 developing countries in Asia, Africa and Latin America, whose share in the Romanian foreign trade has grown in the last two decades three times, a growth that is above the amplification rate of these ties. The growth of these economic trade relations, other-worldly sales, cooperation, under the most varied forms, has an important role in Romania's economic relations with

In Alexandria, the second largest bearing manufacturing unit in Romania produces truck wheels (top photo, p. 4). While Arad (bottom photo) boasts the biggest trucking tool enterprise, intensive traffic of Romanian goods due to be exported, in the case of Constanța: trucks (p. 5, top photo); other Romanian products — railway cars (middle) and tractors (left) are being loaded on ships before being delivered to the end user, the ARO cars (above) are put to rigorous tests.

these countries. Attention should be made that most of the export goods produced in the last years by Romanian enterprises abroad function in these countries. The development of Romania's economic relations with developed capitalist states is part of her foreign policy of promoting equitable, mutually advantageous relations without exclusive and discriminatory policies, able to slow down the free, normal development of these ties. The growth of these economic trade relations, other-worldly sales, cooperation, under the most varied forms, has an important role in Romania's economic relations with

the conclusion of long-term commercial and industrial and technical-scientific cooperation agreements, on the mutual application of the most favorable national conditions, on Romania's position among the and users of the generalized system of economic preferences and the creation of total economic ties at government level. Romania's economic exchanges with these partners include the most varied ways — from direct flows of material goods to by or multilateral cooperation in industry as well as in creation of production and trade joint ventures located in these countries or in Romania.







## INFORMATICS ON A BUS

The current production of computer technology has come to a standstill: the offer of services put out by the units supplied with equipment for practical training in the field of informatics is exceeded by the demands of education establishments and other institutions. Under the consequences somebody suggested that mobile laboratories, especially equipped with computer technology and highly trained staff should be directly supplied to the beneficiary for a limited duration of time, in collaboration with the Atomic Enterprise of Bucharest and the Factory of Electronic Computers, ICSIT-TCI (the Institute of Scientific Research and Technological Engineering for Computer Technology and Informatics) has designed and built the first mobile laboratory of nuclear training for computer technology and informatics.

It is a LIIRD type of bus which can comprise ten working cells. In a specially designed space of 6 x 2 sq.m., each cell being distributed for two platforms. Such a working space can be provided with a microcomputer with black-and-white or colour monitor, a flexible record unit, a cassette player and a microprocessor or a terminal connected in a DIPS mini-computer. The prototype of the

SCIENCE and LIFE

## A NEW TECHNOLOGY

Test-tube babies. One would hardly believe it possible. Now, plants too stop being dependent on the soil. They can grow anywhere: on sand, on glass, on asphalt. We are referring to a new technology of growing hothouse vegetables and flowers. In Romania, this technology is applied to tomatoes. Since 1983, at the Ecumenical Enterprise for Vehicle and Tractor Production, capitalization and industrialization and at the Gafsi hothouse enterprises, hothouse tomatoes have been grown on mineral sanding and peat respectively.

All the hothouse plants in the capital, the plants are cultivated on 30 cm long, 15 cm wide and 15 cm high mineral sanding parallelepiped covered by a polyethylene foil. The plants are rooted in this new type "soil" and are fed automatically through capillary tubes with a nutritive solution whose concentration is fixed electronically in keeping with the requirements of the plant's development stages.

The advantages of this growing technology: first of all, results in the fact that no residues are left, so the soil is no longer polluted; moreover, the plant's feeding being very rigorously checked, the entire amount of nutritive substances is assimilated and therefore the fertilizers are turned to best account. On the other hand, the uses of electricity through pathogen attacks transmitted through the

soil, some of them chemically incurable or requiring difficult and expensive treatments are completely eliminated. Cropping on inert substratum can be applied to high-yielding varieties alone. That is why tomatoes were chosen in the beginning, as they hold the largest share in hothouse vegetable growing and are a very intensive growth. Tomatoes also display a greater adaptability than other plants and give the fact that they are the most threatened by diseases transmitted through the soil, they entered priority in the application of the technology. So far, following the use of the new technology, yields of 120-130 tons per ha have been obtained with hothouse tomatoes in the first cycle and of 70 tons in the second one. Experiments show that these products could be doubled if hothouses did not have to be opened in the July-August period owing to the heat. Tests are currently conducted for applying the technology to hothouse cucumbers, eggplants and even flowers.

SCIENCE and LIFE

## EXOTIC RADIOACTIVITY

As early as the beginning of this century physics entered its priority among sciences following the breakthrough made in the universe of knowledge by the prominent Albert Einstein and the extraordinary burst of quantum mechanics. If the 20th century has the technical-scientific stature we all know this is largely due to physics, which has generated the whole chain of technologies currently in use. Beyond applications however (suffice it to mention the laser and the nuclear-electric plants) in order to how respectfully to physics' achievements) fundamental research is continuing its breath-taking ascent, thousands and tens of thousands of physicists being currently engaged in the attempt of unification within a coherent theory of the four forces existing in nature (electromagnetic, gravitational, strong and weak).

As an exponent to the works of a recent edition of the prestigious Nuclear Physics School in Frascati, I have had the opportunity to realize that in many domains of physics, and above all in nuclear physics, the Romanian researchers play an important part. One of their major contributions seems to be the attempt at theoretically unifying two phenomena: nuclear radioactivity and nuclear fission, proposed by the Romanian

researchers A. Sandulescu, D. Popescu and M. Vasile (all of them researchers at the Central Physics Institute of Magurele, together with physicist W. Gellner of Frankfurt, a theory confirmed by the successful tests conducted on this topic in the labs of Oxford, Britain, and Orsay, France).

Natural radioactivity, we know, is a phenomenon discovered by H. Becquerel in a fragment of uranium ore, a nucleus is converted into another nucleus, emitting during this process three natural radiations: alpha particles (helium nuclei), beta particles (electrons or positrons) and gamma particles (electromagnetic radiation).

Nuclear fission, discovered in 1938-1940, is a phenomenon of one nucleus spontaneously splitting into two nearly symmetrical fragments, releasing during this process free neutrons

SCIENCE and LIFE

(which, through a chain reaction, will hit and split other nuclei, which in their turn will release neutrons, etc.).

First, taking into account the fact that fission is the two decaying of a nucleus into two fragments — natural radioactivity and nuclear fission — various ideas had reported intermediary phenomena (very heavy nuclei with an atomic mass over 200, splitting spontaneously into two fragments of unequal mass) the four researchers initiated the existence of another kind of radioactivity which subsequently, after their elaboration of the technical apparatus, has been called "exotic radioactivity".

The theory was completed after long years of work and numerous tests: highly sensitive detectors confirmed the fact that from the "background" of alpha radiations emitted by a rare substance can be separated, whose "author" is a nucleus of radium 223, which spontaneously gives off alpha particles, but also a heavy ion, most of carbon 16 or neon 24.

Despite the two classic means of disintegration, the four authors of the theory claim, there are numerous other means, slow and "silent" (devoid of chain reaction) phenomena, from which virtually stable fragments of matter result.

The possible means of stepping up these processes — discovered by the physicists — will sooner or later be exploited in the application of this "cold" fission phenomenon, in which the fragments resulting from the process are in a fundamental state and which do not present the usual emission of radiations — with the risk they entail for life matter.

And they will record in the golden book of history the names of the four discoverers and theoreticians of "exotic" radioactivity.

Sandulescu, Popescu, Vasile, Gellner.

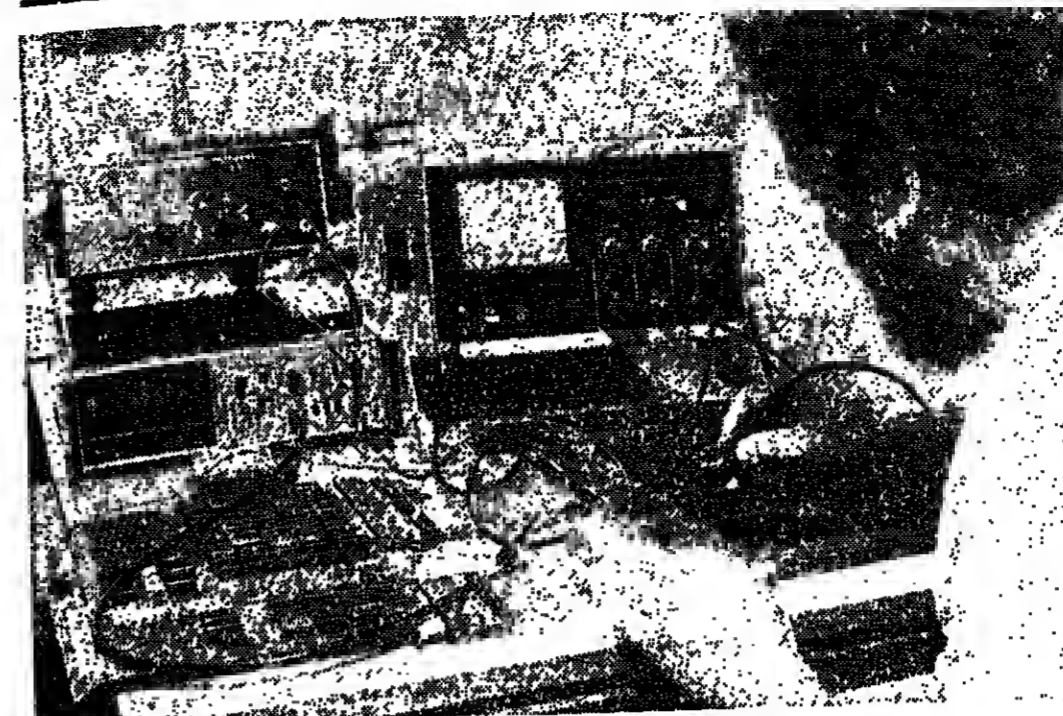
ALEXANDRU MIRONOV

## INTEXP

The visiting card of the research collective from the Artificial Intelligence and Robotics Lab within ICSIT-TCI (The Scientific Research and Technological Engineering Institute for Computer Technology and Informatics) is marked by several prestigious achievements both in the field of application and fundamental research. Among them is the INTEXP system. It is a general instrument used for improving "expert" type intelligent programmes. Now INTEXP is used in improving expert systems in domains like: defect diagnosis in electronic cir-

cuit boards (where, through a suggestive colour graphic drawing, the defect is directly indicated on the circuit's general sketch); technical design (for control devices of the railway tracks); technological design; the control of ecological systems (the control of artificial "greenhouses" with fish), etc. The specialists of ICSIT-TCI are working at present on the application of INTEXP system in meteorological and hydrological forecasts.

MILANA MIHAI



## REACTIVE KNOWLEDGE

The neuron — the basic cell of natural intelligence — could be the equivalent of a microprocessor. This speculation does not solve the technological handicap of intelligent machines. Artificial intelligence is not a copy of the way in which man acts intelligently; the model used in effectively representing knowledge in the computer's memory is essential. Computer and informatics specialists unanimously appreciate that special qualitative mutations will take place in future years in the structure of installations and programmes, owed especially to researches in the field of artificial intelligence. The most spectacular performance in ex-

SCIENCE and LIFE

## FLEXIBLE SYSTEMS

Flexible fabrication systems are no longer the avant-garde of high technology. This solution was rapidly adopted by most enterprises with small series and unique productions and in general, by the fabrication profile is often changed. But flexible systems are very expensive. No production workshop can afford of such an investment by itself. The solution is to carry out the respective fabrication flow can be instructed and trained.

A research collective of ICSIT-TCI (The Scientific Research and Technological Engineering Institute for Computer Technology and Informatics) conceived as a national first, the model of such a simulator. The SIMFMS programme allows the simulation of flexible fabrication systems for the machine building branch. This simulator is made of five modules which compute the best distribution of parts for each machine, the entrance order of parts and tools for each machine based on the minimum tool flow, the best movements of system components (robots, etc.) the real change of transport facilities and processing machines, the detailed presentation of operations in the whole flexible system.

Based on the data fed to the system (topological and technological) the simulator, through coloured Petri networks, gives the best solution for the flexible system achieved. The representation of results is done graphically (diagrams, level curves, etc.) or through tables, which, depending on the simulation process, is done through animation.

The efficiency of the SIMFMS programme is related first of all to solving the problem of the high cost of introducing flexible

artificial intelligence from ICSIT-TCI (in the field of fundamental research concerning the representation of knowledge in creating efficient inferential mechanisms, the development of complex control strategies in the field of artificial intelligence applications (expert systems) the PKPS system (Parallel Knowledge Processing System) was initiated in 1988. It is meant to realize a new family of computers able to solve problems based on combining computations with knowledge processing. The PKPS system highlights elements of artificial intelligence, developed through original researches, having as subject the efficient solution of non-linear reasoning problems to be introduced in the new computer generations. The originality of the system consists of the memory device.

Basic data are fed into the memory of this new computer type, data held by the greatest experts in the field. Thus, the machine becomes in its turn an "expert" and can solve any problem. Owing to its proper-

SCIENCE and LIFE

ties of mass reaction to exterior stimuli, the memory device conceived for the PKPS system is called "reactive memory". This type of memory represents the basis of introducing massive parallelism in systems.

Therefore, compared to traditional computers, problems solved over a longer period are automatically multiplied by this computer, by the parallel processing of memory data.

In the case of the PKPS system, a large number of processors (reaching a million) cooperate in solving problems. Besides conceiving these processing elements, specific to automatic reasoning, human researchers have also studied the best conceptual solutions for communication networks among processors. Theoretical models were elaborated thus solving technological questions concerning their production at industrial level.

The main advantage of the "intelligent" machine conceived by ICSIT-TCI is that it does not require the user to have specialized training in the computer field. It solves very complicated reasoning problems without a previous programming but by processing data stored in memory. If for example you have a headache and want to know the reason, you just activate the computer which will scan anatomy, diagnosis, etc. and will give you the answer quickly, making at the same time recommendations for treatment or supplementary investigations. This "intelligent machine" is activated just by plugging it in a socket, like a common TV set.

The interest taken in the last few years in underground hot water as an alternative energy source has fully been justified also by the arguments offered by the UN specialized bodies, which put their energy potential at the equivalent of over 6,000 billion tons of fuel. But low- and medium-temperature waters are more numerous worldwide, and for the time being, the least tapped.

Carbon dioxide offers significant advantages compared to the working agents previously used. From and isobutane — crude derivatives — besides their high cost, are highly inflammable and toxic. On the contrary, carbon dioxide can be found in plentiful amounts in nature, being emanated by the earth itself, so that one only has to collect it. But even the synthetic production of carbon dioxide is very cheap, especially as it can be reconverted.

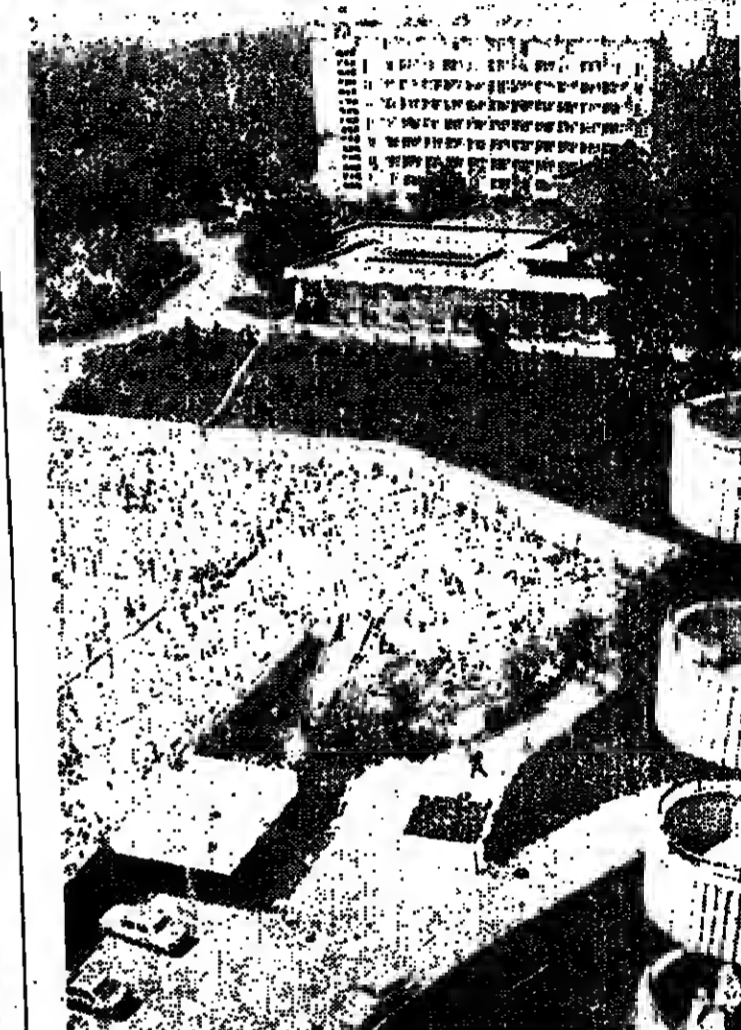
Romania's rich geothermal potential mainly located in the western part of the country (Bihar, Arad, Satu Mare and Timisoara) and the important carbon dioxide deposit at Ciocan (Bihar county) made possible the development of power generating units using these sources. Consequently, the first geothermal power plant being medium-temperature underground hot water was started up at Ciocan and is expected to be put into operation in the near future. The discovery and tapping of alternative energy sources therefore remain extremely topical.

MILANA MIHAI

## FROM GEOTHERMAL SWIMMING POOLS TO GEOTHERMAL ELECTRIC POWER PLANTS

For centuries on end, geothermal water was only used for therapeutic purposes. At present, following numerous studies of the spatial flow and temperature of their origin and direction of flowing, of their chemistry, they have started to be put to most diverse uses: heating sources for hothouses and greenhouses and for domestic water, sources of thermal energy for industrial and agricultural units, etc.

While only underground hot water having a temperature of +150°C was being used to generate electricity throughout the world by means of very costly exchange agents, a group of teaching staff and students of the Oradea Higher Education Institute, led by associate professor engineer Teodor Maghiar, D.Sc., devised and put into operation a world first: an installation for the conversion of the energy of medium-temperature



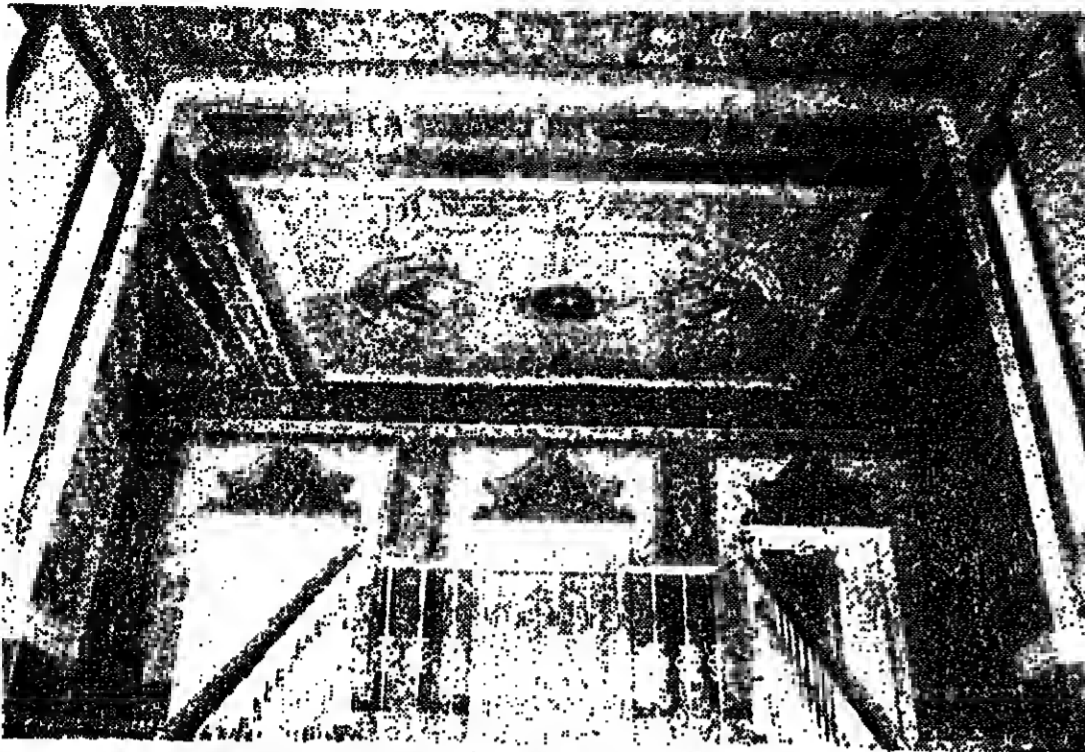
carbon dioxide. The interest taken in the last few years in underground hot water as an alternative energy source has fully been justified also by the arguments offered by the UN specialized bodies, which put their energy potential at the equivalent of over 6,000 billion tons of fuel. But low- and medium-temperature waters are more numerous worldwide, and for the time being, the least tapped.

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MILANA MIHAI

SCIENCE and LIFE



**A FUTURE FOR THE PAST  
TO BE A RESTORER**

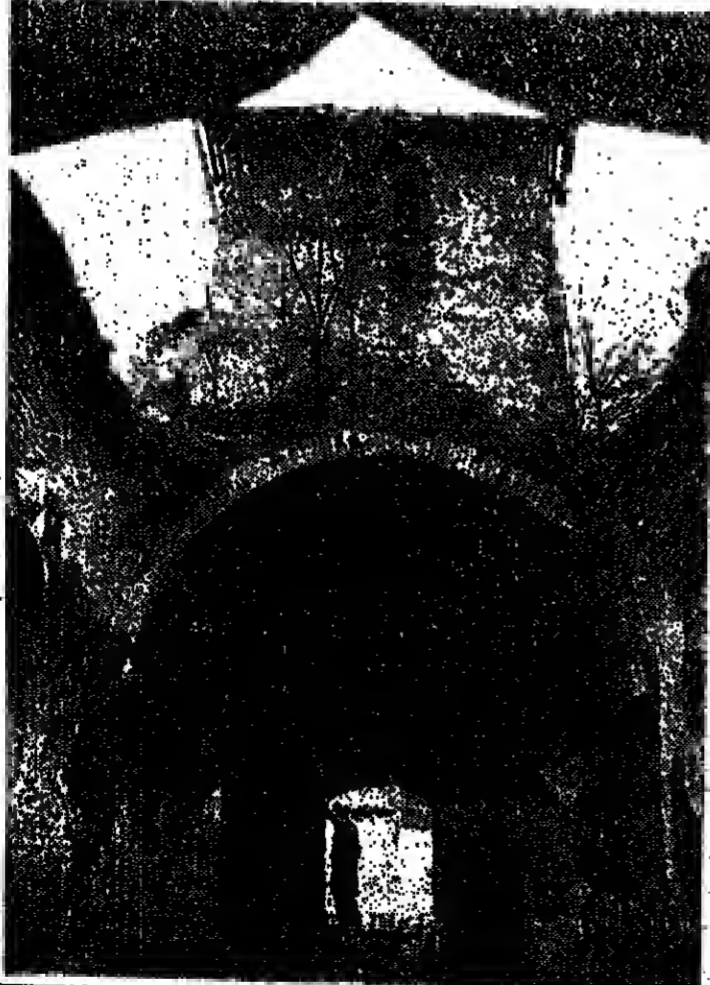
**What must a restorer know ?** According to Ian Cioflan, almost everything and, in any case, a little more than that. In order to get acquainted with the object of his work, the restorer must command a full body of historical, architectural and technical-engineering information.

It is not possible competently to blink out the restoration of an wheel — any collector told us — without understanding the aesthetic outlook that begot it. The arsenal of technique and materials that were used by the artist or evaluator who made it, if it is a field of work which eras, styles, and schools which eras, styles, and schools, because any error may prove fatal and may spoil in a split second the touch of genius of a great concept. The artist, who has delighted people for centuries, has Chemistry has made tremendous progress and places, at our disposal today unsuspected, simply unsuspected means. But, is it just one stoic act, to deny its utilization without at the same time knowledge of "historical" "country," of the hindrance or coloration that prevailed 300-400 years ago, may prove disastrous. The lesser technician, to take another example from the field, has had an evolution. He has had to wait in the 18th century used to have the different from one to the 18th century. To overlook such delicate qualities is potentially tantamount to order by imprudence. The most precious means of preservation or restoration can be disastrous, and the means is the one that is perfectly the one in question. Once often than than has to give up successively the most tempting "modern" solutions to go back to the "ancient" or "medieval" or "renaissance" master of a few centuries ago. For, I repeat, it is essential to preserve the historical essence of the art object, its unmistakable touch of genius. The fatal mistake made by the restoration — belonging to the romantic school — was the outcome of their desire to "recreate" the past, to do not create, but to work with what already existed. To restore or to recreate is not the same. To restore is to work with what was created and achieved.

"May I ask you if there is a restorer who is endowed with all the knowledge and gifts required by such an understanding of what I should call a mission, not a profession or a trade?"

"Your question is justified. I plead for absolute competence in all the disciplines that contribute to the modern profile of the restorer's profession (it is a profession though). I enthusiastically plead for the idea of teamwork. For only a multi- and interdisciplinary team can assume the task of laying solid foundations and then of closely pursuing the minute restoration

proper. The heath of the artist who revivifies a half-destroyed fresco or the traveler of the artisan who fills the holes in wall eroded by time must carry the weight of the science and thinking of a learned collective (and I'm trying to weigh my words,



look by look, the original palette is recovering its former brilliance. The carefully restored details of the interior glow back to the ambience the smart elegance it used to dispense at the end of last century. The future Art Museum of Tirgovie and Municipality will soon be ready to receive its visitors (top left, the hands of time, but also at the hands of the successive interior that completely altered its look. The restoration will retrieve the monument's optimum architectural form.

of a most competent team. I plead for the institutionalization of this profession, for the institutionalization of a deontological status of restoration as a profession and passion, at the convergence of science and art.

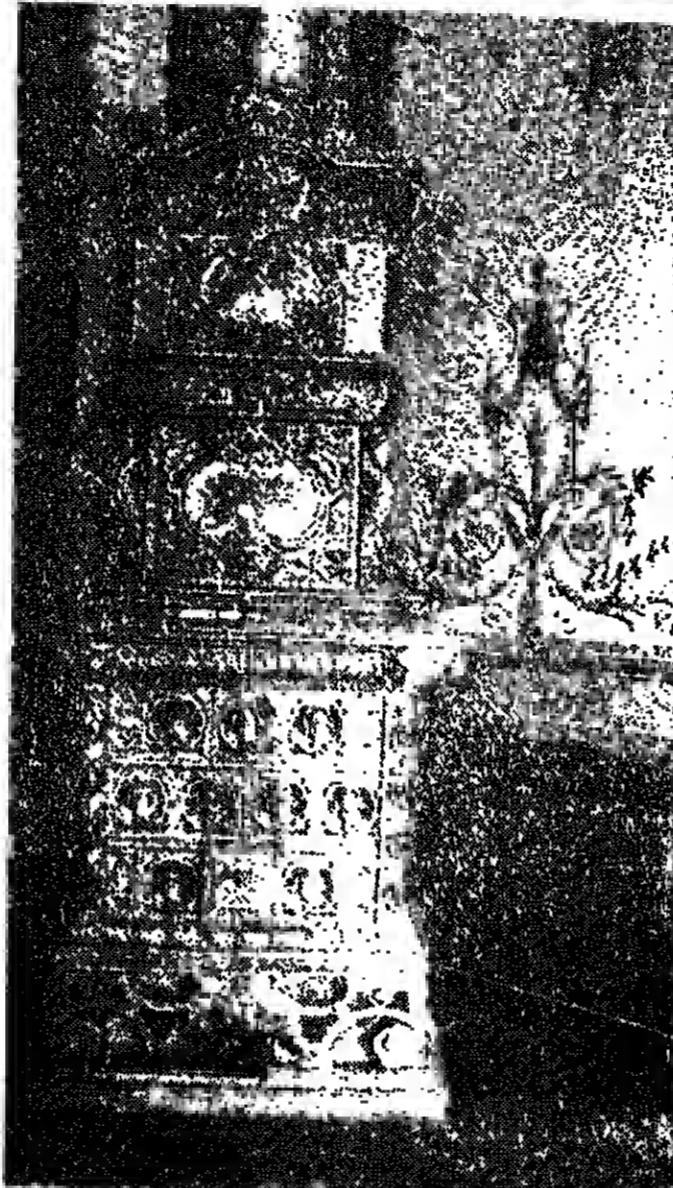
"What you are envisaging presupposes a great human

and not only human investment. Is it justified? What does the care for ensuring a future for the past mean in this perspective?"

"This care is a fundamental component of self-respect, in this country and everywhere in the world where it is manifested."

The artistic, cultural monument to the broadest sense of the word is the materialization of what has with good reason been called the "cultural treasury of the nation," ultimately of the mankind. A collectively cannot exist from a spiritual point of view without this collective work, which is the cultural treasury. No effort towards its intellectual preservation is useless. I am currently working in Tirgo, where I have been for a year. It includes painters Vasilo Comane and Nicolae Sava, sculptor Vasile Crăciunescu, architect Florin Ciampac and photographer Emil Gheorghe. The team is bound together by some common ideas concerning our work and by our authentic passion for the work.

"Tirgo is an old settlement, the first capital of Walla-

[illegible]

obia. Our team is exemplary for the outlook that presides over the restoration work in Romania today. We are working on an old tower of the stronghold, on a 16th century church and a 19th century building, the former local protecta office. No valuable element of the old cultural heritage must escape our attentive care."

"What are the outstanding problems the Tirovists works are posing to you?"

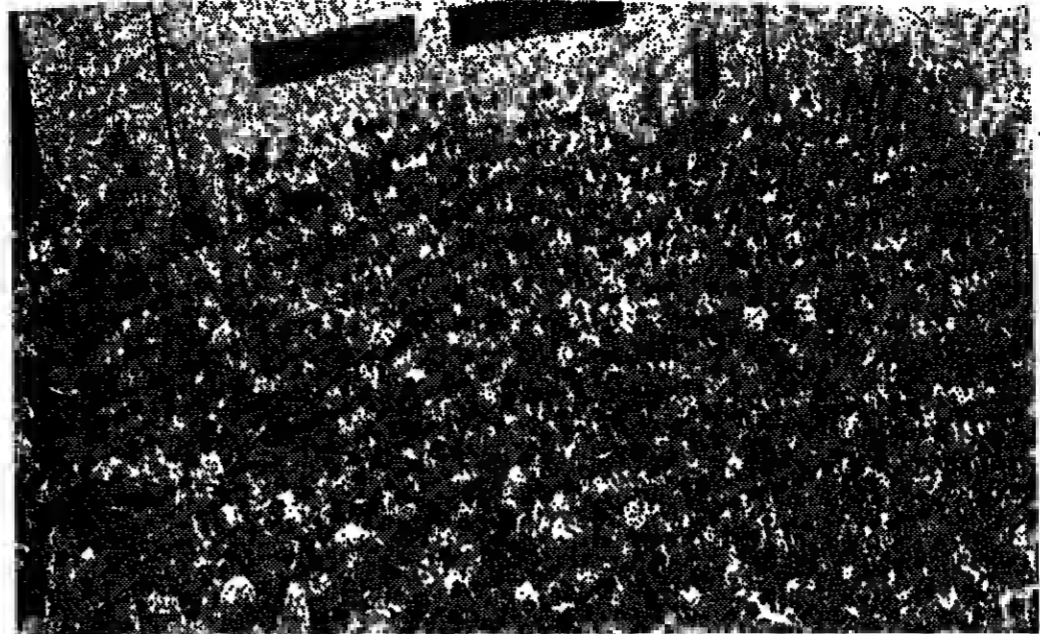
"There are so many of them that even their brief enumeration would exceed the space at our disposal. I shall dwell on a few of them, which represent my objective criteria, those which have long preoccupied me and which have sometimes, consumed me for days and nights on end, especially nights perhaps.

"First of all, the building of the former prefect's office. Its strictly artistic value can be and has been discussed. But its historical value is not to be discounted. It was the contact point, in fact, between the old and the new, and, in my opinion, I was excited to be authorized to see its restoration. I saw the work which bears the stamp of the period, the style prevailing at the end of the nineteenth century, was adorned with much luxury, and in the interior I found the technique of the French masters. The previous random restorations of the building had destroyed the original paintings with other motifs, making now necessary a new artistic work of the same kind. The original paintings, I noted, had been destroyed. I felt it very hard to express my delight at the renewed look of the smart interior, restored to their right

the southeastern side of the stronghold emerged again July 12, during the aerial evolutions made with new views building the underground tunnel in front of the main block in the city. City G courses, the works were stopped. Archaeological observation on the spot highlighted by the historical multilateral reconstruction of the monument to which the chief role had once lived, achieved in a record time through professor Florescu's passionate communication to me his archaeological conclusions, that it was the same passage: that characterized my quest for the best outcome for the reconstruction of the gate and fortified wall stretching another 90 m to the east in an architectural, restorative, or unique character, representative of the historical and archaeological site. The architectural solution found for the filling and consolidation of the monument seems elegant and efficient, as it requires little currency within the contemporary town.

"Finally, the realisation of the socialist aspect of the small industrial enterprise is a task of the 20th century church is a work it is already involved in with the same intimate conviction, that the realiser's work is not and cannot be a mere technical operation. It is a socio-technical operation and it requires technical operation and it requires, professionally operation, high-tech operation. But it is the first of all, a subjective operation, highly personal, of a moral order. Every day we have towards the values of the past."

ADBIAN RIZAL



# YOUNG MUSICIANS PERFORMING FOR YOUNG AUDIENCES



Every year,  
from June to  
September, Cos-  
tino's resort  
on the Black  
Sea coast —

with a "crescendo" of an unrelentingly successful of events, each lasting (three or four days) the poetry theatre, film, young artists' jazz, humour a.o. genres. Adding to the variety of the programme the Gala of Young Concert Soloists, staged in the hospitable multi-purpose hall of the modern hotel Forum. The four-day event created a genuine feeling of a festival, and the young people in the audience and the young musicians on the platform — instrumental soloists and singers who were accompanied by the Cukfonia Symphony Orchestra — were all inspired and participated in a chamber music programme on the fourth

The overall level of the performances achieved by the two youths was extremely high, as one would expect from a bunch of laureates of prestigious national and international competitions (Mozart Competition, etc.). They deserve special mention for the extraordinary impression they made on the public. First of all, pianist Ileana Horowitz, a recent graduate of the Bucharest Conservatory, who, in her performance of the soloistic part of Chopin's Concerto in E minor, an artist endowed with a clear intellect and with expressive freshness and great activity, unable to avoid such recurrent technical and scholastic dryness. She confirmed that excellent impression on the evening when she performed mezzo-soprano Roxana Donose's vocal recital of Liszt's songs by Enescu. In which of Richard Strauss, in which of Gustav Mahler, in which of Franz Schubert the singer's expressive intentions with an irreproachable intuition and a subtle sensitivity were able to penetrate. Roxana Donose, Bucharest Conservatory student, also distinguished herself by her remarkably intelligent phrasing and her accordance with the meanings of the Henryk Lutyens' "Planet Suite." Coleseu, a student at the last year of the conservatory, was outstanding in two works by Haydn — the Concerto in major and the Variations in minor — through his spontane-

ous, lively, captivating playing which exalted the illusion that the piece was emerging from them and there, out of the interpreter's creation.

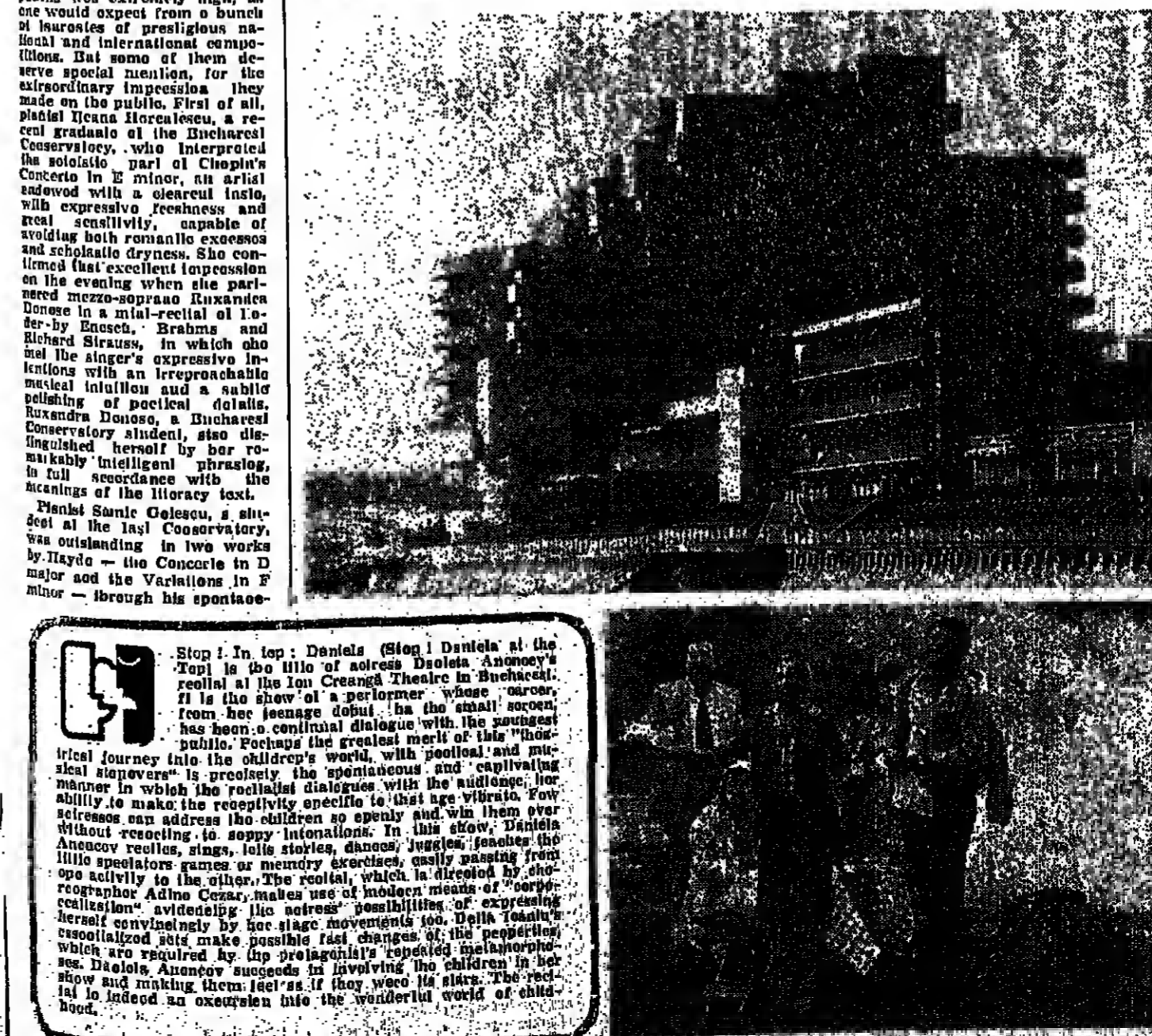
Dr. Constantin Ionescu-Galef, a graduate of the Art High School in Braşov, proved a born virtuoso in the field of the violin, and Loló's Symphonie capricieuse, impressing by the full overflow of his attacks, his youthful energy and his technical technique even in the Lento passage of acerbine difficultly. Soprano Irina Sandulescu-Bălan accented the dramatic character of the music, displaying the timbre of a lyric soprano of a rare quality, capable of moving the emotion of an audience by the most beautiful of vocalizations. Violatino, the young Mariana in La Traviata, also noteworthy were the appearances of violinists Irina Muresan, and Constantin Popescu, and the School in Bucharest, who offered an authoritative, elegant and supple account of the Atlatlucan Suite, and the Concerto for Violin and of the Concerto No. 4 in D

minor by Bach and in the Concerto No. 4, in D major by Minnelli, and Georgiana Cioabani, in French-Soviet and in Fauré. Cioabani, a soprano, who evinced a relaxed attitude, a clear and penetrating tone in the Concerto in E minor by Mendelssohn.

Like-wise, mezzo-soprano Gabriela Drăgășanu, in arias from Samson et Dalila by Georges Bizet and in Fauré's *Le Chant de Pénélope*, shared to advantage her ample, wide-ranging voice, with a brilliant low register.

Her colleagues, however, in the success of the Gala was mostly by the three conductors who directed the symphony orchestras: the young, energetic and dynamic Lennard Dănilă from the Romanian Opera in Iasi and Constantino Brăveanu from the new-born ensemble from the Brăşov Philharmonic under whose baton the last evening's concert brought to the climatic close of the Gala.

EDGAR ELLAN ■

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A grainy, high-contrast black and white photograph of a large, multi-story building, possibly a factory or warehouse. The building has several windows and a prominent chimney on the left side. The image is very dark and noisy, with a lot of black and white speckling.

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## THE FIRST TIME IN FRONT OF AN AUDIENCE



The first question I asked conductor Năgulescu was a somewhat surprising one: "What is your international schedule, especially in Turkey and Switzerland where you serve as principal guest conductor in Istanbul and Winterthur, you would have worked with many young Romanian and foreign students. What is your opinion of the soloists who performed at the Costinesti Gola?"

"In the first place, I think that the Costinesti resort has become a cultural centre of considerable importance, where artists of all genres and generations enjoy great popularity. Indeed, in my concert series, I have collaborated with a large number of young people, but here of Costinesti I was especially impressed by the first violin Haruzescu and Sami Gulescu, singers Gabriela Drăgusa, Irina Șindulescu-Rătoiu, Alexandra Donose, violinist Irina Mureșan.

"Do you consider these Golas important?"

"Inviting the best young musicians to Gelos of this kind seems to me viol because they are not yet known to the public, which is on essential condition for a soloist at the outset of his career. The initiative of the College of Music Critics within the Association of Theoretical Artists and Musicians (ATM) to stage such Galas is a very varied and extremely useful organization of the Union of Communist Youth and with Philharmonies throughout the country to further extend the dissemination of it of invaluable help in encouraging young talent further on in the path they have chosen."

"The question of the Romanian people has a special propensity for music?"

"Undoubtedly. The Romanians are attracted to music through their temperament. I believe that 80 per cent of our children are ill for a musical education, for beauty. This education should be intensified by all means, through singing, radio, television, educational concerts, singing in amateur choirs, groups, instructive games etc."

**An interview conducted by  
N. F.N.E. ■**



**Aspett from the Summer Theatre (top); conductor Harion Innesen Golați (above); Forum Hotel (below); image from the movie "Întrează-nă numai pentru tine" (bottom).**

**Director** Vlado  
Calotescu (b.  
1929) is one of  
the experienced  
Romanian film  
castles. fl

[illegible]

## GLIDING WITH... SWALLOWS

On the morning of August 7, 1988, a crew counting 40 members set out on an expedition down the Bistrita river. The means of navigation: 25 boats made of... tractor tyres. The route of the voyage totals up 120 km (stops on the banks are made only to spend the night); according to the plan, the distance was to be covered in a week's time.

The sailors are students of the agroindustrial high school in Vicovul de Sus — a commune located in the far north-east of the country. The "Skipper" of the team is Sorin Trelea, the teacher who, for years, has led the biology society of the high school.

The feverish preparation of the boats, sleeping bags and most of all of the original boats took several months until the much wished-for voyage of the summer holidays. One would not expect the parents to fully share the excitement of the explorer students. For the Bistrita (lined by mountains and thick forests) is a river with a frequently cloudy flow. At a place called "Rădăuș" (whirlpools), the water of the river rages and screeches pulling the sailors' skill to hard trial.

However, in spite of the possible risks, no one was seized by emotion. The biology teacher Sorin Trelea enjoys an unreserved credit due to a whole range of powerful reasons. First of all, his being an intrepid was proved as early as the time when he was only 18 himself. Then, in 1958, finding out that he suffered from altitude sickness he joined the "Moldova" alpine club in Iași and barely one year later he flew alone by glider and received a sports pilot's licence. Is there any connection between his passion for biology (well known by many people) and the passion he lavishes in gliding?

Our question did not put him off. On the contrary, he told us (not with a teacher's air) how sometimes he flies as high as 2,500 m, together with the stars or owls. Once, high up at about 1,800 m, a hawk was chasing three pigeons. The appearance of the glider drove the predatory bird away. But, beyond any emotional reasons, the sports master has been studying for years the aerodynamic characteristics of birds that use the ascending thermal air currents. The same currents that carry the glider, step by step, up to thousands of meters. His remarks are accompanied by vivid, convincing images: with one hand he controls the glider while with the other one he operates the camera, the stillness of which is ensured by a system he himself has devised. The biologist and glider pilot Sorin Trelea has stored in his personal library one thousand slides. Part of them will serve to illustrate his work on the flight of migratory birds, those who know best how to rely on the ascending thermal currents.

The recent journey with the students and the teacher's family (the wife and two chil-

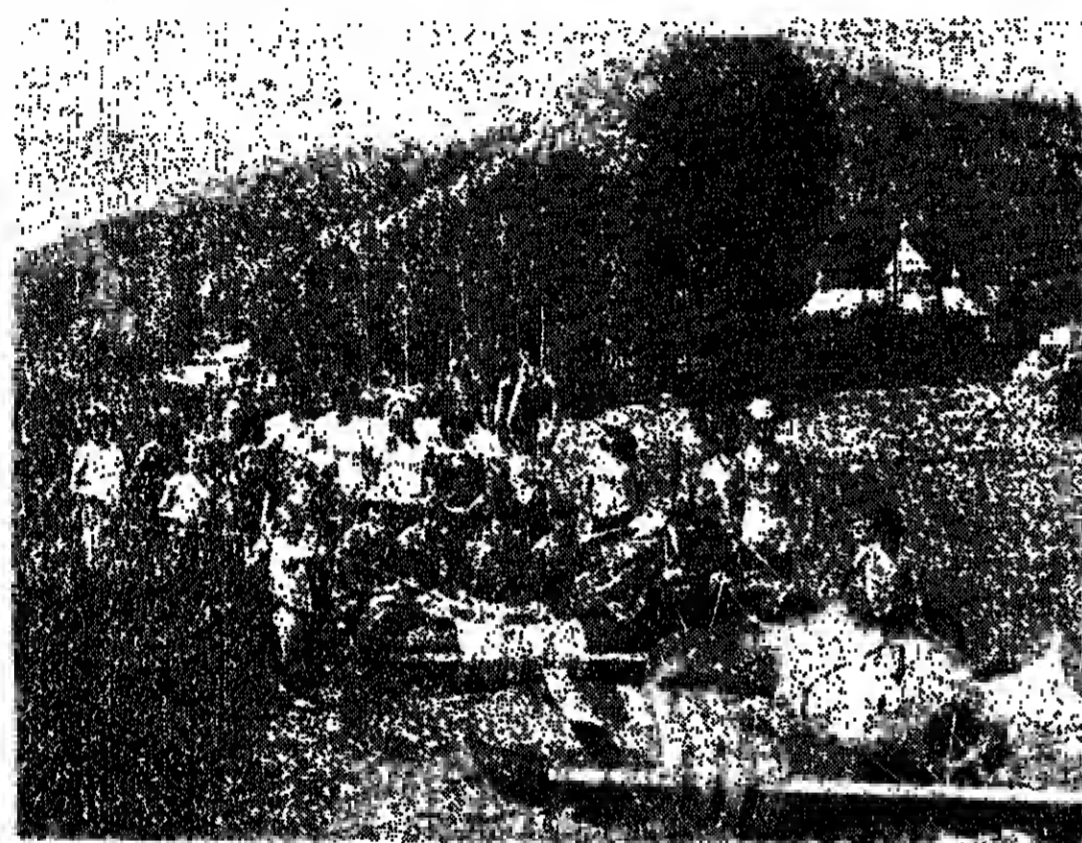
dren, seven and eleven years old, respectively) aimed, among other things, at: 1. self-knowledge; 2. the study of grassy and brush species in the aquatic environment; 3. the identification of fauna specimens that are characteristic of the river, mainly the huck — a voracious predator fish which seems to be disappearing. A man of the mountains, of the air and of the water, a sportsman and a researcher, Sorin Trelea can be attributed the



passion of an ecologist as well: "Nature is wise; it annihilates many of the destructive effects — the consequences of man's ignorance and carelessness. The polluted waters and seas are passing through a great danger that concerns us directly. Let us think as often as possible of how little the land means of the area of our planet."

Indeed, let us think!

VIORICA CIOBBAGIU ■



The craft (top and middle) are being tested and checked before sailing; in the bottom picture, the famous Mangalia stud which has won many awards in national and international competitions.

## A CAVALCADE OF SUCCESSES

A cavalcade is something unique. The memory of many films preserves the seducing images of cavalcades in which the horses' shapes and movements proved decisive in labelling the quality of a show. For most of our contemporaries films are the only means of knowing and enjoying this original event. The gallop of horses considered for thousands of years the fastest means of transport on land has been quietly done by the expansion of motor vehicles. Increasingly less used, horses have become an attraction in terms of entertainment and equestrian.

Along the years Romania has seen the rise of real "reserves" of horses, distributed according to breeds. Such a reserve is the stud farm of Mangalia. Here, on the sea shore, people have grown the most faithful descendants of the Arab breed. Nicolae Stretan, veterinary surgeon with the stud, describes them as middle-sized, mobile animals with an elegant gait, very impulsive but generous. Set up in 1928, the stud of Mangalia has come to grow also families of Arab horses. Each horse's pedigree includes at least five generations. Zootechnical data are rigorously kept to state genealogical relations specifying the origin, performance, number and value of descendants, considerations on each horse's aptitude. As part of that accurate of families, selection operates by means of annual standings according to which specialists decide where and how each horse is to be used. According to that selection the nucleus reserves only horses with physical qualities and performances matching the best record category. The qualifying test for the Arab breed is gallop under saddle with a load of 80 kg. The best performance ranges between 18 and 112 minutes per one thousand metres.

## LASER ACUPUNCTURE

Dr. Virgilu Bănu from the Galați County Hospital checked, through a scientific method that between the points recommended by traditional Chinese medicine and the corresponding organs there is a mysterious link. Dr. Virgilu Bănu, in collaboration with his colleague dr. Gheorghe Bănuș identified an isotope whose energy best fits the theory of classical acupuncture meridians. Then, with the help of this isotope the two physicians established acupuncture points and 14 meridians. What for centuries has been accepted and checked only through effects can be now seen and photographed.

This discovery opens a new horizon to fundamental and applicative research concerning the scientific bases of traditional medicine and opens the way to new treatment possibilities.

The responsible and tenacious work of specialists and researchers has helped maintain and perpetuate this valuable heritage. For several years the stud of Mangalia has been hosting an original contest entered by all studs in Romania. This year, besides the thoroughbred and the Arab, the contest enlisted the studs of Sîntia with the Arab breed, Clisău with the thoroughbred, Bogdan, Izvin with the Novus and the Ardennes, Rădăuș with the Gidau and the horse of the kovina, Boiceanu with the Romanian heavy harness horse, Jergău with the Racecourse of our horses, the Racecourse of Ploiești with the Romanian Trotter etc.

Brand prospects are opened for the Romanian racing horses. Last year, at the Balkan Games of Sofia, the female mare from the stud of Jergău, Chikara, won the first prize in the hurdles race. This year, the female mare from the stud of Jergău, Chikara, won the first prize in the hurdles race. This year, the female mare from the stud of Jergău, Chikara, won the first prize in the hurdles race.

Convincing are the images of beauty. And the breeding of the Romanian cavalcades of the future could mean a step towards a more beautiful and more useful world. Thanks to a competition where the horse wins back its place in the contemporary rhythm of life.

MARILENA POTU ■



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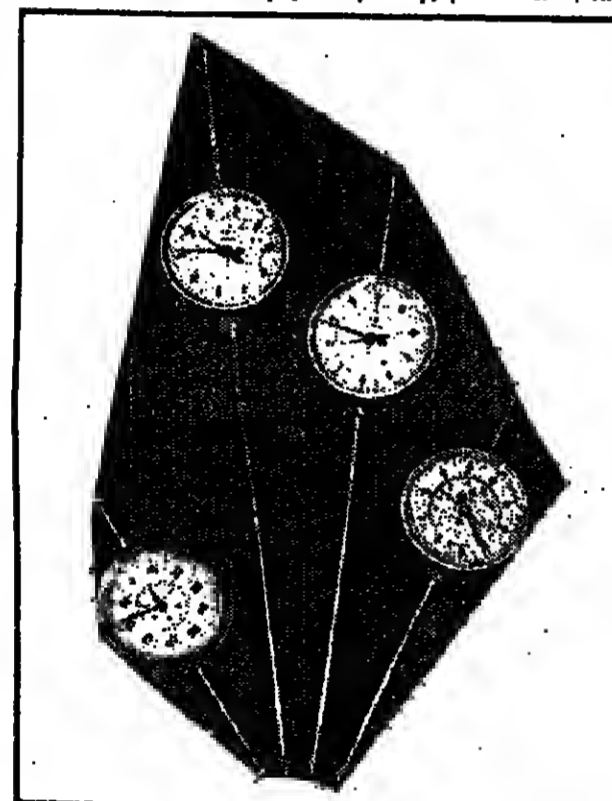
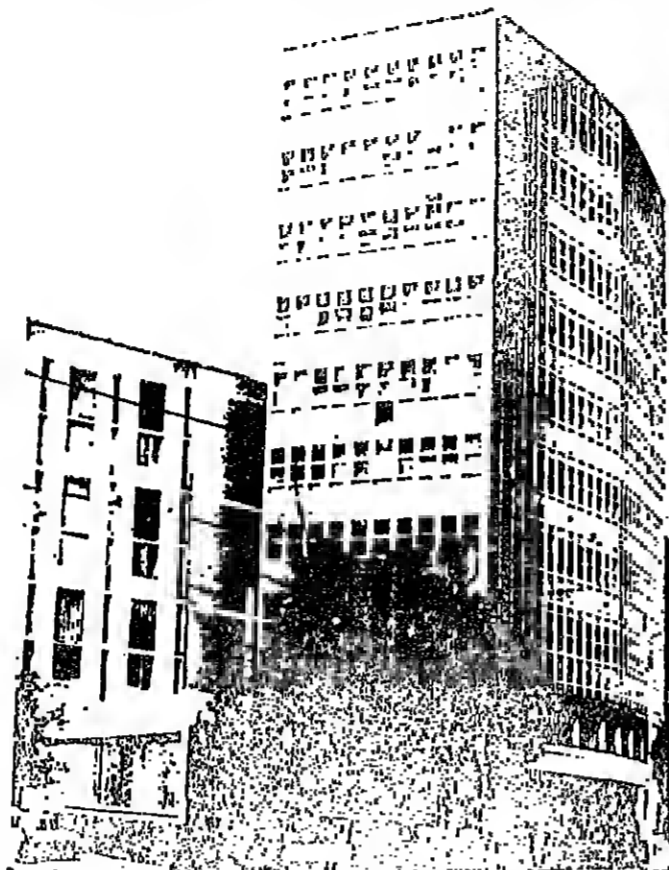
If, generally speaking, "man is the measure of all things" as Protagoras put it, we must stress that the quality of your products and the productivity of your labour are strictly conditioned by the use of MEASURING AND CONTROL APPARATUS.

The post- or in-process sizing of your products supplies you the information through which you can become EFFICIENT as a producer.

It is this efficiency (viz. quality, producti-

vity, competitiveness) that the Fine Mechanics Enterprise (IMF) of Bucharest has in mind when offering its beneficiaries:

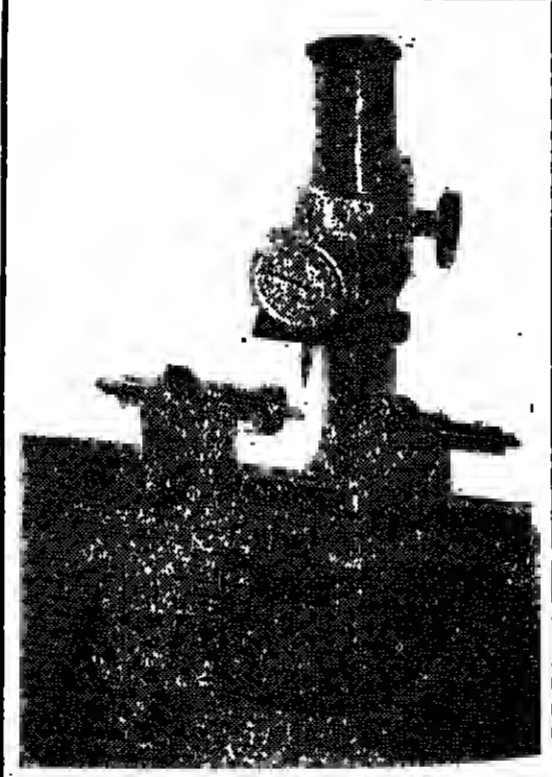
- measuring and control apparatus for lengths, pressures, temperatures, discarding, times and speeds;
- special tools (diamond and sinter-carbide metal tools), holders, high-accuracy and fineness devices and dies, having a high degree of productivity and durability.



## MEASURING AND DIMENSIONAL CONTROL APPARATUS AND INSTRUMENTS

- dial gauges ● bore dial gauges ● gear measuring instruments; ● threaded conic gauges for the oil industry.

- circular dial snap gauges ● gear pitch-error and gear-tooth-thickness measuring instruments ● reading ball-gauges; optical read-out devices and rules.



## AUTOMATION ELEMENTS AND MECHANISMS

- Programmers ● electromechanical impulse counters ● programme control for automatic washing machines ● discharge counters with oval wheels ● electromechanical tachographs for motor vehicles ● complex speed measuring installations for locomotives and subways.

## FOR PRESSURE INDUSTRIAL CLOCK-TYPE APPARATUS, INSTALLATIONS AND TEMPERATURE CONTROL

This apparatus family includes: pressure switches and thermostats. They are indispensable in the automation of starting and stopping installations using fluids whose temperature and pressure must be maintained within certain preadjusted limits. Pressure switches and thermostats are made by the Fine Mechanics Enterprise in a wide variety according to the features and type of motors they are mounted on and the conditions of the environment.



## IN- AND POST-PROCESS SIZING GAUGES

- They are built according to modern principles, with pneumatic inductive, piezoelectric transducers, whose signals are processed and displayed analogically or numerically in modular-type electronic units:
- pneumatic post-process sizing gauge - SUPERJET ● pneumatic post-process sizing gauge - ELSUPERJET ● post-process sizing gauge with electric contacts ● inductive electronic post-process sizing gauge ● roughness measuring post-process sizing gauge; smoothness measuring gauge (electronic levels).
- In-process sizing gauge for continuous exterior cylinder surfaces with one and two measuring points ● for continuous exterior surfaces and for continuous interior cylinder surfaces with two measuring points ● in-process sizing gauge for centreflex grinding machines ● In-process sizing gauge for exterior diameters of narrow surfaces ● copying systems mounted on machine tools for processing through copying after a pattern.

REMEMBER THE



IMF TRADEMARK



## SINTER-CARBIDE METAL PRODUCTS

The main groups of products bearing the "CARME-SIN" mark - which are the object of the Bucharest Fine Mechanics Enterprise's production programme - are the following: sinter-carbide metal brazable tips and inserts for metal cutting; sinter-carbide metal inserts for mining tools; sinter-carbide metal inserts specific to the wood industry, building materials and extraction industry; products for drilling installations; dies for screws and nuts; dies for roll bearings; other types of products upon the foreign partners' demand.

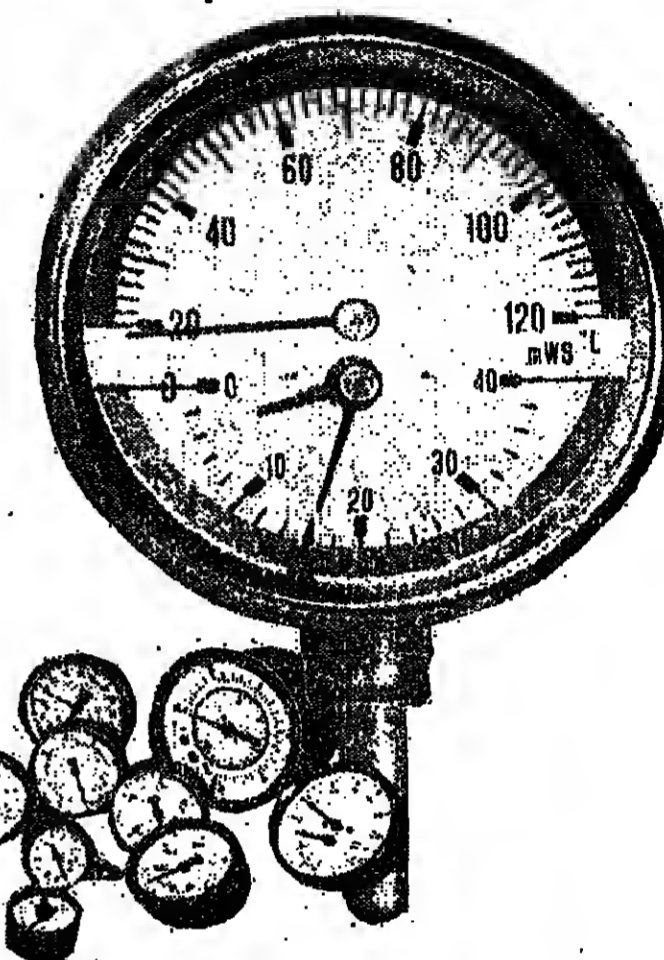
According to the concrete destination indicated by the end user, these products are executed out of the PKMG groups of carbide metal powder, after ISO international standards or according to other requirements specified in the order.

In order to increase the durability and performances of the sinter-carbide metal inserts, the method is applied of coating them with extra-hard layers of titanium carbide, giving the inserts an increased durability of up to 300 percent, as compared to the normal execution.



## PRESSURE GAUGES

Through the great diversity resulting from constructive variants based on measuring limits, accuracy, diameter, connection and scale type, the Fine Mechanics Enterprise can satisfy the most exigent demands of its clients (standard pressure gauges or of special construction, upon demand). There are: ● general use industrial manometers ● vibration-proof manometers ● corrosion-proof manometers ● capsule-manometers ● double indication manometers ● manometers-thermometers.



## DIAMOND TOOLS

The processing of ferrous and non-ferrous metals, of sinter-carbide metal, stone, concrete, ceramic and glass - through modern methods - calls for the use of diamond tools on an ever larger scale.

The manufacturing programme of this kind of tools is achieved at IMF on the basis of the licence purchased from WINTER firm of West Germany and is currently in full swing as a result of the growing demand. It comprises the following more important groups:

- diamond mills with metallic or resin-

uous binder of various shapes and sizes, with cubic boron nitride.

- diamond tools for construction-material processing
- diamond tools with galvanic binder
- honing diamond blades
- diamond pastes
- diamond tools for trimming and shaping abrasive stanes
- chambering tools with extra-hard materials from diamond polycrystals or cubic boron nitride
- diamond drawing dies.

## AND THE EXACT TIME

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